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ABSTRACT

The higher education literature is replete with analyses of survey data that attempt to promote insight into various college student characteristics, behaviors, and value orientations. Many studies have been conducted to understand or estimate students' short-term activities and chances for personal and academic success, but less effort has been made to identify the factors that might influence or determine students' long-term goals and aspirations. This study attempted to fill a gap in the literature by using a national, comprehensive survey to consider the relationship of different thematic or conceptual factors to the weight that students assign to various life-time goals and achievements. Using the Cooperative Institutional Research Program (CIRP) annual survey of incoming college students, the study finds that students' motivations for attending college are better predictors of postgraduate goals than are behavioral measures or demographic variables. CIRP responses from approximately 4,400 students in 1986 and about 270,000 students in 2000 were used in the analysis. (Contains 6 tables and 11 references.) (Author/SLD)

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The higher education literature is replete with analyses of survey data that attempt to promote insight into various college student characteristics, behaviors, and value orientations. While numerous studies have been conducted to understand or estimate students' short-term activities and chances for personal and academic success, less effort has been made to identify the factors that might influence or determine students' long-term goals and aspirations. This study attempts to fill a gap in the literature by utilizing a national, comprehensive survey to consider the relationship of different thematic or conceptual factors to the weight that students assign to various life-time goals and achievements. Using the CIRP annual survey of incoming college students, the study finds that students' motivations for attending college are better predictors of postgraduate goals than are behavioral measures or demographic variables.

An assessment of the relative influence of environmental, behavioral, and Attitudinal aspects of the pre-college experience in Determining students' long-term goals and aspirations

The higher education literature is replete with analyses of survey data that attempt to promote insight into various college student characteristics, behaviors, and value orientations. While numerous studies have been conducted to understand or estimate students' short-term activities and chances for personal and academic success, less effort has been made to identify the factors that might influence or determine students' long-term goals and aspirations. For example, while the development of student typologies has assisted higher education researchers and administrators in understanding students' activities, behavior, values and even their attitude and orientation toward college, these models have largely not attempted to project activities beyond graduation, nor otherwise assess students' priorities for the future. Other research involving college students understandably has focused on their activities within college, and the factors that promote short-term academic success, social congruence, and satisfaction with the university experience. This study attempts to fill a gap in the literature by utilizing a national, comprehensive survey to consider the relationship of different thematic or conceptual factors to the weight that students assign to various life-time goals and achievements.

Theoretical Framework

Different typologies of college students have been developed over the years in order to assist faculty and administrators to better understand the role of peers in the college student experience. Those typologies in existence have most commonly been developed using data on student attitudes, values and behavior. For example, the typology developed by Astin (1993) was based on the pre-college attributes of students and their reported expectations for college. Using a total of 60 items from an annual survey of incoming freshmen in his analysis, Astin

included an examination of how students spent their time during their final year of high school in the development of his model of seven hypothesized student typologies. Taking Astin's hypothesis a step further, Kuh, Hu and Vesper (2000) developed a student typology linking student reported behavior and activities with actual observed collegiate outcomes and performance.

Numerous researchers have also attempted to connect different parental characteristics, and students' relationships with parents, to various college outcomes. For example, Wintre & Sugar (2000) used measures of parental authority and reciprocity to predict a students' successful transition to the university environment. Hickman, Bartholomae and McKenry (2000) combined parents' education and parental authority within the family structure with other variables in an attempt to discern patterns of student adjustment and academic achievement. Still other researchers have used combination models to study student outcomes such as academic performance and retention. For example, Ting and Robinson (1998) used a combination of cognitive and psychosocial variables—socioeconomic, environmental, and demographic—in an attempt to predict academic performance during the freshman year.

Along with his model of student typologies, Astin's involvement theory (1984) has been widely used in an attempt to explain a variety of student social, psychological, and academic outcomes. Involvement is conceptualized by Astin not only as time spent on a given task, but also as the amount of psychological and physical energy a student devotes to various aspects of his or her college experience. Higher levels of involvement have been shown to be associated with broad forms of success in college. For example, Ayaya (1997) used involvement theory to show that various pre-college behavioral and motivational characteristics are associated with academic achievement in college as measured by scores on the Graduate Record Examination

(GRE). She found that possessing strong goals for financial and career success, and participating in high school clubs and organizations, were both negatively correlated with scores on the verbal and quantitative portions of the GRE, respectively. Possessing the goal of contributing to the community well-being was positively correlated with the verbal portion of the exam.

Although many typology models and other frameworks have made extensive use of information regarding students' pre-college characteristics, Cote and Levine (1997) note that little more than common sense has historically been used to inform understandings of what actually motivates students to attend college. In response, they developed an empirically-based typology of five discreet motivations: careerist-materialist, personal-intellectual, humanitarian, expectation-driven, and default. They note that their typology shares certain characteristics with Astin (1993) and others, but differs most significantly from other models in its more direct reflection of the attitudes and motivations students form before arriving at college.

All of the aforementioned studies and their associated theories and frameworks attempt to predict, or at least understand, student outcomes while in college. Few studies attempt to project beyond the college years to understand students' longer-term goals and aspirations. For example, Eskilson and Wiley (1999) included post-college variables in their attempt to better understand what motivated the recent generation of college students. They noted that while one hallmark of a "coherent" generation is the presence of similar tastes, values, and goals, some members face various barriers to internalizing commonly held goals and objectives due to their race, gender, and/or social class membership. For example, students from lower socioeconomic backgrounds have been shown to view their lack of money and absence of connections, among other factors, as barriers to securing what they would like to achieve in life. At the same time, Eskilson and Wiley state, one of the widely held assumptions about the current generation is a

pessimistic orientation toward the future, and the belief that little hope exists for exceeding or even matching the material success of one's parents. For this reason, the authors hypothesize that students whose parents possess less formal education will be more optimistic about their own future occupation and material success. In a study of undergraduate students' hopes and dreams for the future and the perceived likelihood of their attainment, Eskilson and Wiley found that gender, race, and the education of one's parents were positively correlated with a desire to have a family, while race was associated with a desire for financial/economic success. Parents' education failed to predict any of the other goals and aspirations included in the study.

In a study of similar phenomena, McNamara and Cover (1999) explored the relationship between various student characteristics and activities and the liberal arts goals of a private institution in the southeast. The stated institutional goals included fairly standard items such as improving thinking/communication skills, understanding self and society, increasing knowledge of other cultures, and developing tolerance and concern for others. Since educational goals such as these are long-term, process-oriented, and lack specific quantifiable targets, comparison can be made to various other long-term goals and aspirations commonly held by students. The authors found that involvement in various types of student organizations and activities were associated with support for the goals of a liberal education. However, participation in sports and athletics was negatively associated with support for liberal arts objectives, while working for pay was unrelated in either a positive or negative manner.

In the current study, an attempt is made to determine the respective influence of different categories of the pre-college student experience—environmental, behavioral, and attitudinal—on individuals' long-term goals and aspirations. Environmental factors are those that are outside of a students' control, but omnipresent in theoretically shaping—consciously and/or

subconsciously—their experience and view of the world. The factors identified and selected for this study are the student demographics of race, sex, and parental characteristics. Students' behavior is represented by their reported use of time during high school and the allocation of this finite resource among various types of academic, social, and recreational activities. Students' attitudes are represented through an examination of their reasons for going to college—their views on the importance of college and its purpose in their own life plans. Together these three categories of variables are used to help predict the types of goals and aspirations possessed by students. Unlike most previous research, these goals are postgraduate, futuristic and conceivably lifelong pursuits, and not immediate objectives for the college experience or short-term outcomes such as academic success and graduation.

Methodology

The data for this study was obtained from the annual survey of newly matriculating students conducted by the Cooperative Institutional Research Program (CIRP). Based at the Higher Education Research Institute at the University of California at Los Angeles, the CIRP survey has been conducted annually since 1966. The survey instrument consists of over 100 items covering a variety of student characteristics—demographic, behavioral, attitudinal, academic, and plans for the future. The 2000 survey sample involved approximately 400,000 incoming freshmen at over 700 participating two- and four-year degree-granting colleges and universities throughout the United States. Independent analyses were conducted on data collected from the 1986 and the 2000 surveys. Information from approximately 4,400 respondents was selected for the 1986 analysis—a randomized and weighted subset created primarily for teaching purposes. A standardized sample of approximately 270,000 records was used for the 2000 analysis.

In order to reduce and better manage the large number of independent variables in the study, factor analysis was used to thematically group the behavioral and the attitudinal items, respectively represented by the types of activities to which students reported devoted their time in a typical week during their final year of high school, and their stated reasons for attending college. Twelve behavioral activities are included in the 1986 CIRP survey; 13 options were given on the 2000 instrument. Eight possible response options existed for each activity, ranging from zero to over 30 hours per week spent in a given activity. Some of the listed activities are more academically based (studying/homework, talking with teachers outside of class), some are extracurricular in nature (exercising/sports, student clubs/groups), and some are primarily social (socializing with friends, partying). Other activities might be viewed as either anti-intellectual or otherwise unrelated to achievement in the academic realm (partying, watching TV). Some items do not easily fit into one specific category. For example, "working for pay" is an activity largely unconnected to the others in the list. In addition, although working may detract a student from devoting appropriate time to studying or other academic or extracurricular pursuits, it may actually promote student success by forcing better management of time, or increase a student's motivation or academic achievement by exposing him or her to the realities of the labor force. The 1986 variable "using a personal computer" was dropped prior to the 2000 survey, ostensibly due to the ubiquitous nature of this activity by the time of the later iteration. In addition, the 1986 item "hobbies" was split by 2000 into the more specific activities "reading for pleasure" and "playing video/computer games". The earlier variable "religious services/meetings" became "prayer/meditation", while "household/childcare duties" was a new variable added by 2000.

Eleven possible reasons for attending college were included in the 1986 CIRP survey; 13 items were listed on the 2000 instrument. Respondents were asked to indicate the relative

importance of each reason in their decision to go to college—*very important, somewhat important,* or *not important*. Two items not present in the 1986 instrument were added before the 2000 survey—"a mentor/role model encouraged me to go", and "to get training for a specific career".

Factor analysis was also used to reduce the data on students' long-term goals and aspirations, thematically grouping the various individual items into a more manageable number of dependent variables used in subsequent analysis. Information on goals was obtained through a question on the CIRP instrument asking students to rate the relative personal importance of various possible achievements, both specific and general. Although the survey does not indicate the specific timeframe for accomplishing the various feats listed under the common question heading, the wording of the individual items lends toward their possession of more long-term qualities. For example, although such objectives as "influencing the political structure" and "developing a meaningful philosophy of life" might conceivably represent "achievement" in the short period of time following gradation from college, conventional wisdom indicates that such feats require a lifetime of concerted action and reflection. Eighteen goals were included on the 1986 CIRP survey; 20 items appeared in the 2000 instrument. Respondents were asked to indicate the relative personal importance of each item—*essential, very important, somewhat important,* or *not important*. The variable "becoming an expert on finance and commerce" was dropped from the 1986 instrument, while three new variables were added to the survey by 2000—"keeping up to date with political affairs", "becoming a community leader", and "integrating spirituality into my life".

Measures

Parent Index. A parent index was created through the summation of values from five variables related to parents' education, career, and income. Education and income exist in the database in ordinal and interval form, respectively. However, career information exists as nominal data, and thus required conversion into an alternate form in order to be combined with other variables to create a parent index. Career information was transformed into ordinal data through use of the occupational prestige index created by Stevens and Featherman (1981). Their "Socioeconomic Index of Occupational Status" is a revision of the Duncan Socioeconomic Index, published in 1961 using income and education data from 1949 and 1950, respectively. Using 1970 census data, Stevens and Featherman revised the Duncan index given differences in the relative prestige of various occupations since 1950 based on changes in the associated educational and income levels of the individual professions and the addition of significant numbers of women into the labor force. The authors offer two versions of a revised index, one based on the combined educational and income attributes of men and women, and one based only on the male labor force. They note that each index possesses relative advantages and limitations. For this reason, the indexes were combined for the purpose of the current study. Stevens and Featherman assign each occupation a numerical rating on a scale of 1 to 100, and thus for study purposes the careers included on the CIRP survey are based on a 200-point scale. The status index for each individual career option is listed in Table 1.

Not all of the CIRP-provided career options fit neatly into U.S. Census Bureau occupational classification scheme used by Stevens and Featherman, and thus required an assignment of reasonable proximate value by the author. Slight differences in the treatment of selected options was made between the 1986 and 2000 analyses. For the 1986 analysis, since no

value could be assigned to the CIRP career categories of "other," "undecided," and "other occupation," individuals who chose any of these response options were dropped from the sample. This reduced the sample size to 3,100. "Homemaker" was assigned a value equal to that of "laborer (unskilled)". "Unemployed" was assigned an index value of "1," as the lack of a job was equated with the absence of prestige associated with active employment in any given field. In this sense, an unemployed physician and an unemployed laborer both lack the prestige and status associated with being active, visible participants in their respective work environments. Two other assumptions contributed to the decision to assign a value of "1" to all unemployed individuals: persons with lower prestige occupations generally will experience higher rates of unemployment, and the high correlation of both educational and income with occupation will help counteract any inherent limitations of treating all unemployed individuals the same.

Slightly different reasoning guided the assessment of the aforementioned career categories for the 2000 analysis. Rather than being assigned a value equivalent to a laborer, the selection of "homemaker" led respondents to be dropped from the analysis, as the term was deemed as vague and one that may refer simply to a parent who, for varying and disparate reasons, did not work outside of the home at the time of the survey. Individuals of this type may be unemployed but seeking work, disabled and unable to work, or not seeking work for other reasons. Given the diffuseness of the response option, it was dropped from analysis. "Unemployed" was dropped for largely the same reasons. "Other occupation" was again omitted from analysis, while the categories of "other" and "undecided" were dropped from the survey instrument by 2000. The filtering of certain response options reduced the 2000 sample to 270,000.

Once the career variable was converted to numerical form, the five variables composing the parent index (mother's education, father's education, mother's career, father's career, and parents' income) were standardized and summed to create the final value for the parent index.

Time Spent in High School. Factor analysis was used to reduce the number of variables that describe the ways in which students spent their time in high school, resulting in four general categories of activities in both the 1986 and 2000 analyses. The principle components method was used to capture the largest percentage of variation in the variable set. The factors were rotated using an oblimin method with Kaiser Normalization; associated pattern weights, percent variance explained, and Cronbach's alpha are listed in Tables 3a and 3b.

The four resulting factors in the 1986 analysis were named Hedonism, Activism, Self Focus, and Work Focus. These four factors combined to account for 55.3 percent of the variance among the individual variables. The "Hedonism" factor is composed of two activities—socializing with friends, and partying—where the emphasis is on self-entertainment and the improvement of one's social standing or popularity. The variable "exercising/sports" was dropped from the factor after failing to meet a test of reliability. The "Activism" factor includes five activities that, while possessing certain social qualities, involve goals of a more direct or indirect academic nature, including studying, talking to teachers, and participation in clubs and organizations; and activities of a more altruistic or devotional nature—volunteering and religious participation. The variable "using a personal computer" was dropped from this factor after loading at only .23. The "Self Focus" factor is composed of only two variables, watching TV and hobbies, both of which involve largely solitary activity lacking in significant social value. The final factor, "Work Focus", is a unique factor composed of only the variable "working for pay." As suspected, this variable lacks a significant connection to any of the others in the list,

possibly due to the variety of reasons for working and the mixed benefit or detriment of such activity on students.

The 2000 analysis differed slightly from the 1986 results. The variable "exercising/sports" was retained in the "Hedonism" factor because of its perceived similarity in personal motive or gain to partying and socializing with friends. The previous "Activism" factor was renamed "Self-Improvement" in order to be more inclusive of items that are not necessarily "active" per se but often result in some form of personal gain to the individual. "Self Focus" was renamed "Leisure" in recognition that activities such as playing video games and watching TV do not necessarily occur in isolation, but are often engaged with others as a form of socialization. The variable "working for pay" again loaded as a unique factor in the analysis. The four factors together accounted for 51.5 percent of the variance among the variables.

Attitude Toward College. Factor analysis was used a second time to determine general orientations or attitudes toward attending college, again using the principle components method. The factors were oblimin rotated, with associated pattern weights, percent variance explained, and Cronbach's alpha listed in Tables 4a and 4b. Three factors resulted in the 1986 analysis, while the 2000 data produced four separate categories. The 1986 factors were named Become Educated, Serendipity, and Become Moneyed. These three factors combined to account for 47.4 percent of the variance among the individual variables. The "Become Educated" factor is composed of five variables associated with learning and personal improvement. These variables are to gain a general education; to improve reading/study skills; to become more cultured; to learn things of interest; and to prepare for graduate school. The "Serendipity" factor is composed of four variables reflecting a relative nonchalance or indifference toward attending college, suggesting that college is a rather serendipitous event, one that is simply better than

other available options. The variables composing this factor are nothing better to do; unable to find a job; parents' wish; and to get away from home. The final factor, "Become Moneyed," is composed of two variables associated with financial success—the obvious desire to make more money, and to get a better job.

The 2000 iteration produced four factors accounting for 50.9 percent of the variance in the variable set. The variables composing the "Become Educated" and "Become Moneyed" factors were identical to the 1986 analysis, although the latter was renamed "Advancement" in recognition of the possible non-pecuniary elements of wanting to secure a better job. The addition of the variable "a mentor/role model encouraged me to go" combined with "parents wanted me to go" to create a new factor of "External Pressures", while the factor "Serendipity" was reduced to the two variables "nothing better to do" and "get away from home". The variable "get training for a specific career" was dropped from the "Serendipity" factor due to its failure to pass reliability testing and the lack of a perceived relationship with the other two variables. It was curious that this variable did not load in either of the factors "Become Educated" or "Advancement", raising questions about the general reliability of the item in the survey.

Long-Term Goals and Aspirations. Factor analysis was used a final time to determine patterns among students' long-term goals. The principle components method was used in order to remain consistent with the two previous factor analyses. The factors were oblimin rotated, with associated pattern weights, percent variance explained and Cronbach's alpha listed in Tables 5a and 5b.

The five resulting factors in the 1986 analysis were named Improving the World, Financial Success, Creativity, Responsibility for Others, and Developing Expertise. These five factors combined to account for 55.0 percent of the variance among the individual variables.

The "Improving the World" factor is composed of six variables that involve enacting positive changes in bettering the lives of individuals and communities, including developing a life philosophy, promoting racial understanding, helping others, influencing social values, taking community action, and cleaning up the environment. The "Financial Success" factor is composed of three variables related to business and pecuniary advancement—becoming an expert in matters of finance and commerce, succeeding in business, and being well off financially. Success in three areas of artistic endeavor—performing arts, visual arts, and writing—combined to form the "Creativity" factor. Raising a family and having supervisory responsibility for the work of others are combined to form the "Responsibility for Others" factor. Finally, the "Developing Expertise" factor is composed of four variables that concern becoming a respected, knowledgeable individual in a given endeavor: becoming an authority in one's field, obtaining recognition from colleagues in that field, making contributions to science, and influencing the political process.

The 2000 analysis resulted in five factors that largely differed from the 1986 data both in their composition and their relative descriptive power. "Improving the World" was composed of five variables, four of which were also included in the 1986 eponymous factor. However, in the 2000 analysis this factor explained only 5.5 percent of the variance, compared to 23.2 percent in 1986. The "Creativity" factor was identical in its variable makeup between 1986 and 2000, while the factor "Matters of the Heart" combined the new variable "integrating spirituality into my life" along with the continuing items "raising a family" and "helping others who are in difficulty". The new and continuing variables related to personal gain, influence and expertise were grouped into two new factors named "Power and Influence" and "Fortune and Fame".

Together the five factors accounted for 56.8 percent of the variance among the individual variables.

Results (1986)

A multiple regression analysis was employed on both datasets using the 10 (1986) and 11 (2000) independent variables (environmental, behavioral, and attitudinal) and the five respective dependent variables derived through factor analysis of students' long-term goals. For the 1986 data, listwise deletion of non-response items resulted in a sample size for the five analyses varying from 2,433 to 2,447. For all of the dependent variables except Creativity, an analysis of residuals, including normal probability plots and standardized scatterplots, indicated that the conditions of normality and homoscedasticity were met. For the variable Creativity, the normal probability plot did not conform to a straight line, indicating that the condition of normality did not exist among the residuals. Attempts to improve the normality of the regression model by transforming the data using square root, linear logarithm and base-10 logarithm were unsuccessful. The reader is therefore cautioned to consider this fact when appraising the significance of results of the regression analysis involving the Creativity variable for the 1986 dataset.

The adjusted R-squared obtained from the five regression analyses ranged from a high of .22 for the dependent variable Improving the World, to .06 for Responsibility for Others, meaning the ten independent variables combined for the greatest predictive value for the former variable, with 22% of the variance explained, and combined for the lowest predictive value for the latter variable. Adjusted R-squared values for Financial Success, Developing Expertise, and Creativity were .19, .16 and .08, respectively.

A listing of standardized beta coefficients for the five regression analyses on the 1986 data can be found in Table 6a. For four of the five regression analyses, significant regression coefficients ($p < .001$) and predictive qualities resulted for five of the independent variables in the study. The exception was Responsibility for Others, where only four of the independent variables were significant at that level.

Among the environmental variables, race and gender were significant predictors of two dependent variables each. Both were significant with goals related to Financial Success, with students of color more likely to aspire to such goals, and women less likely than men to possess such aspirations. Minority students were also more likely to aspire to Improving the World, while men were more likely than women to hold Developing Expertise as a long-term goal. The parental index was a significant positive predictor of only one of the five dependent variables, Creativity. A combination of higher income, higher levels of education, and higher social prestige of occupation was expected to correlated with stronger and broader long-term goals and aspirations. The results indicate that parental characteristics may not exert the environmental press to influence students' sense of achievement and possibilities in a manner that conventional wisdom might suggest.

Among the behavioral variables, Hedonism was a significant predictor of goals related to Financial Success, Responsibility for Others, and Developing Expertise. While the first and last of these are to be expected, the connection of Hedonism and Responsibility for Others is curious. Perhaps students with hedonistic tendencies primarily responded to the idea of having administrative responsibility for the work of others more than they did the idea of raising a family, which was also a part of the factor. Activism was a significant predictor of all of the dependent variables with the exception of Financial Success. Given these students' involvement

in a variety of academic and service activities in high school, it is to be expected that they would possess an enlarged awareness of their own capabilities and the possibilities of life, and therefore a broad range of aspirations. The variables Self Focus and Work Focus failed to predict any of the five categories of long-term goals. This also is to be expected, given these students concentration of time on activities that are not linked to traditional academic and social achievement, and the possible associated challenges of developing a greater knowledge of life and its potentialities. These results might also imply that students who are involved in solitary or individualistic activities such as hobbies, working, and watching TV lack the general achievement motivation and associated self-goals that are possessed by students of a more active orientation, regardless of whether their activity is focused in hedonistic or less-hedonistic ways.

Among the attitudinal variables, both Become Educated and Become Moneyed were significant predictors for all five of students' long-term goals. Serendipity, however, was significant only with Improving the World and Creativity. Become Educated was positively associated with all of the dependent variables, which might be interpreted as a consistency or "fit" between a student's "learning" attitude and orientation toward college, and the types of goals and outcomes traditionally espoused and advertised by colleges and universities. The beta coefficient for Become Educated and Improving the World was .35, while the coefficient between Become Educated and Developing Expertise was .31, both of which were much larger than any of those that resulted from the environmental and behavioral variables.

Become Moneyed was a negative predictor of Improving the World and Creativity, but was positively associated with Responsibility for Others, Developing Expertise, and Financial Success, registering a .34 coefficient with the latter variable. An attitude toward college that involves Become Moneyed is therefore positively connected to goals involving power and

influence, while negatively associated with goals involving humanistic or altruistic expression. Students who attend college for serendipitous reasons, not surprisingly, possess lower goal orientations, with a significant predictive value of this attitude existing only with Improving the World and Creativity.

Results (2000)

For the 2000 dataset, listwise deletion of non-response items resulted in a sample size for the five regression analyses varying from 191,348 to 191,877. An analysis of residuals indicated that the conditions of normality and homoscedasticity were met. The adjusted R-squared obtained from the five regression analyses ranged from a high of .20 for the dependent variable Improve the World, to .07 for Creativity, meaning the 11 independent variables combined for the greatest predictive value for the former variable, with 20% of the variance explained, and combined for the lowest predictive value for the latter variable. Adjusted R-squared values for Power and Influence, Fortune and Fame, and Matters of the Heart were .16, .16 and .13, respectively.

A listing of standardized beta coefficients for the five regression analyses of the 2000 data can be found in Table 6b. Because of the significant size of the sample, the vast majority (44 of 55) of the resulting regression coefficients were significant at a level of ($p < .001$). In addition, three of the coefficients were significant at a level of ($p < .01$) and two were significant at a level of ($p < .05$). Only six of the resulting coefficients failed to pass a test of significance, with p values greater than .05. Four of the non-significant coefficients resulted from regression of the factor and dependent variable Matters of the Heart. This is not surprising given that the Cronbach's alpha for this factor is only .53, whereas the next lowest alpha for the dependent variable factors is associated with Creativity, which registered a .66.

Given the size of the 2000 sample and the ubiquity of significance among the regression coefficients resulting from the analysis, it is perhaps more efficacious to examine the individual betas and consider the possible meanings behind values that stand out from others in the data. For illustrative purposes, discussion will focus on independent variables where the highest significant ($p < .001$) regression coefficient across the five dependent variables in the analysis was .05 or greater than the next highest resulting Beta for that independent variable. The benchmark of .05 was chosen given the fact that most of the resulting coefficients fall within a range of –.10 and .10 (only 14 of the 55 coefficients are values outside of this range), and given that this figure resulted in a reasonable number of cases for commentary.

Among the environmental variables, race was a greater predictor of a goal orientation toward Fortune and Fame than for the other four factors serving as dependent variables (the relationship with Creativity was not significant), with students of color more inclined than white participants to express matters of finance and business success as long-term objectives. This could be a function of historically underrepresented groups possessing stronger views about higher education as a social escalator or ticket to the middle class, enabling one to secure a better job and earn the money and respect associated with having a college degree. Of the two behavioral variables that resulted in betas of note, Hedonism was a much stronger predictor of Fortune and Fame ($\beta = .15$) than for the other four dependent variables, with the next highest beta value registering at .04. This perhaps is not surprising given the relatively hedonistic qualities of the items that compose the Fortune and Fame factor. A Work Focus was also more significantly related to Fortune and Fame than the other two dependent variables were significant relationships existed, which conventional wisdom might suggest.

Fortune and Fame again appeared as the dependent variable of note relative to the independent variable Advancement, with a beta value of .19 registering much higher than the next highest beta of -.09 for the latter variable. Again, one might expect such an outcome given the connection between one's motivation and objectives regarding income and status in the two variables. Also among the independent variables, Serendipity registered its higher beta with Creativity, meaning a serendipitous attitude toward college (one attends because he/she wants to get away from home and because there is nothing better to do) is therefore a greater predictor of a goal orientation involving artistic and creative pursuits than it is for the other groupings of goals produced by factor analysis. Finally, the variable Become Educated resulted in two coefficients that were significantly higher than the remaining three in the analysis: a beta of .30 with Improving the World and a beta of .26 with Power and Influence, with the next highest coefficient of .17 associated with the dependent variable Fortune and Fame. This suggests that a motivation for college that involves becoming generally educated in a liberal sense serving as a strong predictor of a goal orientation that involves changing society and influencing the community and its attendant social and political structures.

Discussion

In the original analysis of 1986 data, environmental, behavioral, and attitudinal characteristics of students have different predictive powers related to the five categories of students' long-term goals and aspirations. In examining the regression coefficients listed in Table 6a, a pattern is evident among those coefficients that are significant at the ($p < .001$) level. The three environmental variables—race, sex, and the parent index—together significantly predicted one of the five dependent variables only five times out of a possible fifteen significant relationships. The four behavioral variables resulted in only seven significant relationships with

the dependent variables out of a possible twenty. Combined, the independent variables in the environmental and behavioral categories possess predictive qualities for the dependent variables of students' long-term goals only 34% of the time.

In contrast, 12 out of 15, or 80% of the relationships between the attitudinal variables and students' goals and aspirations were significant at the ($p < .001$) level. Become Educated and Become Moneyed each were significant predictors of all five of the categories of students' long-term goals as derived through factor analysis. Serendipity was a significant predictor only of Improving the World and Creativity. It is not surprising that students who are motivated to attend college out of a desire to achieve certain goals, regardless of their type, possess higher aspirations and plans for the future than do students who find themselves in college due to the lack of better options or in order to get away from parents.

These results suggest that students' reasons and motivations for attending college are better predictors of the type and nature of postgraduate goals and plans for their future than are factors such as race, sex, and parental characteristics. Students' allocation of time during their senior year of high school also has less predictive qualities than do attitudes toward college, although students who devote themselves to activities that involve interaction with others are more likely to possess goals for the future than are students who spend more time in solitary-type activities.

The four independent variables having the greatest predictive power relative to students' long-term aspirations—Hedonism, Activism, Become Educated, and Become Moneyed—together imply an active interest in others and in college as a means of achieving one's goals. In this sense, this study helps to confirm Astin's theory of involvement, with students devoting more physical and psychological energy to constructive tasks (both in their actual behavior and

in attitudinal form) possessing a broader conception of the possibilities associated with life and more expansive goals for their future. If a goal of educators is to help students recognize their various potentialities, and to nurture a future generation of learners who will endeavor to influence society and change the world, the results of this study can be used to promote such an agenda.

The 2000 data tell a fairly similar story, with new insights gained by a slight rearranging of variables into revised factors. Even given the caveat about the significance of regression coefficients mentioned earlier, it is still worth noting which of the respective groups of independent variables were more or less robust in their predictive qualities of the respective goal orientations. Four of the 15 environmental/dependent variable betas, and five of the 20 behavioral/dependent variable coefficients, failed to meet a test of significance at the ($p < .001$) level. In contrast, only one of the 20 attitudinal/dependent variable coefficients failed to meet this standard, implying—at least anecdotally—that consistent with the 1986 analysis, attitudinal measures are a greater predictor of students' long-term goals and objectives than are either environmental or behavioral indicators. Among the 11 independent variables in the analysis, the parent index was alone in failing to meet a test of significance at the ($p < .001$) level for three of the five dependent variables, calling into question the general ability of such a measure to predict outcomes such as those which served as the focus of this study. .

Conclusion

This study is important in developing an understanding of how students' beliefs about the potentialities of life, and their thoughts regarding their own place in the world, are influenced by environmental factors outside of their control, and whether these phenomena can be predicted or explained based on how 1) individuals choose to spend their time while in high school, and 2)

their reasons for attending college. Understanding the relationship between parent characteristics, student behavior, and student motivation and goals can assist practitioners in developing outreach services and programs for students who are more likely to hold attitudes toward the future that are self-limiting or inconsistent with individual or institutional values. Practitioners will also be able to more effectively counsel students regarding their long-term goals by understanding the relative weight of environmental, behavioral, and attitudinal factors on the vision or plan students have for their lives after college.

Table 1. Parent Occupational Scores

Accountant	134.85
Actor	112.57
Architect	158.27
Artist	109.26
Business Clerk	73.15
Business Executive	122.71
Business Owner	161.84
Business Sales	104.99
Clergyman	128.13
Other Clergy	114.69
Psychologist	163.54
College Admin (2000)	160.00
College Teacher	160.95
Programmer	144.20
Conservationist	97.05
Dentist	178.06
Dietitian	82.94
Engineer	151.63
Farmer/Rancher	46.00
Foreign Service	165.84
Homemaker (1986)	32.57
Interior Decorator	65.40
Interpreter	126.09
Lab Technician	107.95
Law Enforcement	75.05
Lawyer	175.38
Military Service	60.68
Musician	86.39
Nurse	93.03
Optometrist	169.89
Pharmacist	161.45
Physician	175.51
Policymaker/govt (2000)	117.00
School Counselor	153.38
School Principal	168.37
Scientific Researcher	161.77
Social Worker	130.53
Statistician (1986)	136.57
Therapist	116.87
Teacher—Elementary	139.87
Teacher—Secondary	148.16
Veterinarian	172.06
Writer	141.77
Skilled Trades	46.37
Other	N/A
Undecided	N/A
Laborer	32.57
Semi-Skilled Worker	37.64
Other Occupation	N/A
Unemployed (1986)	1.00

Table 2a. Descriptive Statistics for the Behavioral and Attitudinal Variables

	Mean	SD	n
Self-Improvement	11.01	3.20	253,197
Hedonism	7.14	2.25	256,987
Leisure	4.83	2.01	257,504
Work Focus	4.02	2.25	258,271
Become Educated	8.31	1.49	262,184
Advancement	4.43	0.97	261,344
Serendipity	1.96	0.59	261,311
External Pressures	2.45	0.76	263,230

Table 2b. Correlations of the Behavioral and Attitudinal Variables

	Self-Improve	Hedon-ism	Leisure	Work Focus	Become Educ	Advance	Serendip	External Pressure
Self-Improve	--							
Hedonism	-.01	--						
Leisure	.05	.16	--					
Work Focus	-.05	.18	-.02	--				
Become Educ	.26	-.04	-.11	-.04	--			
Advancement	-.05	.06	.05	.09	.20	--		
Serendipity	-.05	.13	.06	.03	.04	.06	--	
Ext Pressures	.13	-.00	.01	.00	.23	.16	.08	--

Table 3a. (1986) Factors Resulting from Students' Use of Time in a Typical Week During their Senior Year of High School

Factor 1: Hedonism

Socializing with friends	.81	Percentage of	
Partying	.76	Variance Explained:	18.9%
		Alpha:	.70

Factor 2: Activism

Student clubs/groups	.69	Percentage of	
Volunteer work	.62	Variance Explained:	16.2%
Talking with teachers outside of class	.61	Alpha	.56
Studying/homework	.53		
Religious services/meetings	.51		

Factor 3: Self-Focus

Watching TV	.82	Percentage of	
Hobbies	.72	Variance Explained:	10.9%
		Alpha:	.38

Factor 4: Work Focus

Working for pay	.84	Percentage of	
		Variance Explained:	9.3%
		Alpha:	N/A

Table 3b. (2000) Factors Resulting from Students' Use of Time in a Typical Week During their Senior Year of High School

Factor 1: Self-Improvement

Volunteer work	.65	Percentage of	
Student clubs/groups	.63	Variance Explained:	17.8%
Talking with teachers outside of class	.62	Alpha:	.64
Prayer/meditation	.55		
Household/childcare duties	.52		
Reading for pleasure	.50		
Studying/homework	.46		

Factor 2: Hedonism

Socializing with friends	.77	Percentage of	
Partying	.75	Variance Explained:	14.6%
Exercising or Sports	.64	Alpha:	.59

Factor 3: Leisure

Playing video/computer games	.78	Percentage of	
Watching TV	.78	Variance Explained:	10.3%
		Alpha:	.51

Factor 4: Work Focus

Working for pay	.84	Percentage of	
		Variance Explained:	8.8%
		Alpha:	N/A

Table 4a. (1986) Factors Resulting from Students' Reasons for Attending College

Factor 1: Become Educated

Gain a general education and appreciation of ideas	.73
Improve my reading and study skills	.72
Make me a more cultured person	.67
Learn more about things that interest me	.63
Prepare myself for graduate or professional school	.51

Percentage of Variance Explained:	20.0%
Alpha:	.66

Factor 2: Serendipity

Nothing better to do	.70
Could not find a job	.67
Parents wanted me to go	.59
Wanted to get away from home	.50

Percentage of Variance Explained:	14.9%
Alpha:	.46

Factor 3: Become Moneyed

Be able to make more money	.84
Be able to get a better job	.84

Percentage of Variance Explained:	12.5%
Alpha:	.62

Table 4b. (2000) Factors Resulting from Students' Reasons for Attending College

Factor 1: Become Educated

Gain a general education and appreciation of ideas	.77	Percentage of	
Make me a more cultured person	.76	Variance Explained:	21.2%
Learn more about things that interest me	.68	Alpha:	.71
Improve my reading and study skills	.68		
Prepare myself for graduate or professional school	.49		

Factor 2: Advancement

Be able to get a better job	.85	Percentage of	
Be able to make more money	.85	Variance Explained:	11.5%
		Alpha:	.66

Factor 3: Serendipity

Nothing better to do	.66	Percentage of	
Wanted to get away from home	.63	Variance Explained:	9.6%
		Alpha:	.46

Factor 4: External Pressures

Mentor/role model encouraged me to go	.72	Percentage of	
Parents wanted me to go	.60	Variance Explained:	8.7%
		Alpha:	.36

Table 5a. (1986) Factors Resulting from Students' Long-Term Goals and Aspirations

Factor 1: Improving the World

Participating in a community action program	.77	Percentage of	
Helping to promote racial understanding	.71	Variance Explained:	23.3%
Becoming involved in programs to clean up the environment	.70	Alpha:	.78
Developing a meaningful philosophy of life	.58		
Helping others who are in difficulty	.58		
Influencing social values	.40		

Factor 2: Financial Success

Being successful in a business of my own	.79	Percentage of	
Becoming an expert on finance and commerce	.71	Variance Explained:	11.7%
Being very well off financially	.63	Alpha:	.64

Factor 3: Creativity

Creating artistic works (painting, sculpture, decorating, etc.)	.75	Percentage of Variance Explained:	8.1%
Becoming accomplished in one of the performing arts	.73	Alpha:	.66
Writing original works (poems, novels, short stories, etc.)	.72		

Factor 4: Responsibility for Others

Raising a family	.78	Percentage of	
Having administrative responsibility for the work of others	.48	Variance Explained:	8.1%
		Alpha:	.42

Factor 5: Developing Expertise

Obtaining recognition for contributions to my special field	.78	Percentage of Variance Explained:	5.6%
Becoming an authority in my field	.71	Alpha:	.61
Making a theoretical contribution to science	.55		
Influencing the political structure	.39		

Table 5b. (2000) Factors Resulting from Students' Long-Term Goals and Aspirations

Factor 1: Power and Influence

Influencing the political structure	.82	Percentage of	
Keeping up to date with political affairs	.72	Variance Explained:	27.6%
Influencing social values	.58	Alpha:	.78
Becoming a community leader	.58		

Factor 2: Fortune and Fame

Being very well off financially	.76	Percentage of	
Being successful in a business of my own	.64	Variance Explained:	10.4%
Having administrative responsibility for the work of others	.59	Alpha:	.72
Obtaining recognition from colleagues	.51		
Becoming an authority in my field	.49		

Factor 3: Creativity

Creating artistic works (painting, sculpture, decorating, etc.)	.79	Percentage of Variance Explained:	7.8%
Becoming accomplished in one of the performing arts	.76	Alpha:	.66
Writing original works (poems, novels, short stories, etc.)	.72		

Factor 4: Matters of the Heart

Raising a family	.79	Percentage of	
Integrating spirituality into my life	.64	Variance Explained:	5.6%
Helping others who are in difficulty	.57	Alpha:	.53

Factor 5: Improving the World

Becoming involved in environmental cleanup	.73	Percentage of	
Making a theoretical contribution to science	.55	Variance Explained:	5.5%
Participating in a community action program	.54	Alpha:	.74
Helping to promote racial understanding	.50		
Developing a meaningful philosophy of life	.37		

Table 6a. (1986) Results of Multiple Regression Analysis

Dependent Variables		Improve the World	Financial Success	Creativity	Respons. for Others	Develop Expertise
	N	2433	2455	2441	2447	2436
	R-Squared	.22	.19	.08	.06	.16
INDEPENDENT VARIABLES						
Environmental:						
RACE		* .11	* .10	-.01	-.00	*** .05
SEX		-.02	* -.10	.04	** -.06	* -.12
PARENT INDEX		*** -.04	-.02	* .09	.01	.01
Behavioral:						
HEDONISM		.03	*. 16	-.03	* .10	* .07
ACTIVISM		* .18	*** -.04	* .07	* .11	* .10
SELF FOCUS		-.03	.02	** .07	.01	.03
WORK FOCUS		.02	** .05	.02	*** .04	.03
Attitudinal:						
EDUCATED		* .35	* .07	* .17	* .11	* .31
SERENDIPITY		* .06	*** .04	* .08	-.01	*** -.04
MONEYED		* -.10	* .34	* -.14	* .14	* .12

* $p < .001$
** $p < .01$
*** $p < .05$

Table 6b. (2000) Results of Multiple Regression Analysis

Dependent Variables		Power and Influence	Fortune and Fame	Creativity	Matters of the Heart	Improve the World
	N	192,426	191,348	192,763	192,877	192,730
	R-Squared	.16	.16	.07	.13	.20
INDEPENDENT VARIABLES						
Environmental:						
SEX		-.14	-.10	-.02	* .00	-.05
RACE		.03	.14	* .00	.03	.08
PARENT INDEX		.04	** -.01	** .01	.02	*** .01
Behavioral:						
SELF-IMPROVEMENT		.20	*** -.01	.14	.22	.22
HEDONISM		.04	.15	-.03	*-.00	***-.01
LEISURE		-.07	.03	-.04	-.08	-.07
WORK FOCUS		.01	.06	-.01	* .00	* -.00
Attitudinal:						
EDUCATED		.26	.17	.14	.16	.30
ADVANCEMENT		-.02	.19	-.09	* .00	-.06
SERENDIPITY		.04	-.01	.10	-.04	.05
EXTERNAL PRESSURES		.08	.07	.03	.11	-.06

* $p > .05$

** $p > .01 < .05$

*** $p > .001 < .01$

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